



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,630	06/23/2005	Uwe Boelz	58023US006	6706
32692	7590	11/27/2009	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				DESAI, ANISH P
ART UNIT		PAPER NUMBER		
		1794		
			NOTIFICATION DATE	DELIVERY MODE
			11/27/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary	Application No.	Applicant(s)	
	10/540,630	BOELZ ET AL.	
	Examiner	Art Unit	
	ANISH DESAI	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 27 January 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 30-40,43,44 and 46-49 is/are pending in the application.

4a) Of the above claim(s) 30-38,43,44 and 49 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 39,40 and 46-48 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>081109</u> .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. Applicant's arguments in response to the Office action mailed on 09/04/08 have been fully considered.
2. The objection to claim 39 as set forth in the previous Office action is withdrawn.
3. In response to applicant's explanation, the document DE 44 02 943 A1 in the IDS submitted on 11/25/05 is considered.
4. In view of applicant's amendment and response, the 35 USC Section 112-second paragraph rejections are withdrawn.
5. In view of applicant's amendment, a new 35 USC Section 112-first and second paragraph rejections are made.
6. The 35 USC Section 102(b)/103(a) rejections based on Skipper (US 4,322,575) are withdrawn after reviewing applicant's amendment and response.
7. In view of applicant's amendment, the 35 USC Section 103(a) rejections based on Skipper in view of GB 2 019 412 A are modified.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 39, 40, and 46-48 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

9. Claims 39 and 40 recite "providing a crosslinkable polymer selected...wherein the melt flow index of the polymer is..." and "a crosslinked polymer is selected from the group consisting of...wherein the melt flow index of the polymer prior to crosslinking..." respectively. While there is support in the specification to recite that ethylene-co-octene has melt flow index of 10-100 g/10 min (see 0020-0023 of PG pub of this application), there is no support to recite that the ethylene and methyl acrylate, and ethylene and butyl acrylate have melt flow index of 10-100 g/10 min. Additionally, given that while there is support for specific types of ethylene -methyl acrylate or ethylene-butyl acrylate (see paragraph 42 of the PgPub), there is no support for the broad disclosure of ethylene-methyl acrylate or ethylene-butyl acrylate as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 40 and 46-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

11. With respect to claim 40, it is submitted that applicant has now deleted limitation of the film backing being crosslinked. The present claim now recites that the film backing comprises crosslinked, thermally-conductive material comprising a crosslinked polymer. This is ambiguous in view of deletion of the film being crosslinked, because it is not clear whether the film backing as presently claimed is crosslinked or it contains a crosslinked polymer as an additive. Further, it is unclear as to whether the torque that is being claimed is of crosslinked film or uncrosslinked film? It appears from claim 39 that the torque that is measured is of crosslinked film backing, but claim 40 does not recite a crosslinked film backing.

12. For the purpose of examination, it is interpreted that the backing in claim 40 is crosslinked.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 39, 40, 46, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skipper (US 4,322,575) in view of GB 2 019 412A ("GB412A"), and as evidenced by Langer (US 4,600,634).

14. With respect to claim 39 recitation "An adhesive tape made according to a method comprising the steps of...providing an adhesive layer on at least one major surface of the film backing", said recitation is directed to product by process limitations.

15. The product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

16. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

Art Unit: 1794

17. In the instantly claimed subject matter, the product resulting from applicant's method is essentially similar in scope as that of product of claim 40. Thus, if the product of claim 40 is met by the prior art then, it will also meet claim 39. Specifically, it is submitted that the claimed PSA tape (product) of the presently claimed invention comprises a film backing that includes (a) crosslinked polymers selected from the group consisting of ethylene-co-octene, ethylene and methyl acrylate, and ethylene and butyl acrylate, wherein said polymer has a melt flow index as presently claimed, and (b) the backing comprises at least 60% by weight of the thermally-conductive fillers. Additionally, the crosslinked film backing has an elastic torque as presently claimed and a layer of adhesive (e.g. PSA) is applied to the film backing.

18. Skipper discloses a flame retardant cladding (backing) that is formed of crosslinked composition based on crosslinked blend of vinyl acetate/alkene copolymer with a further polymer (abstract and column 1 lines 10-15). Additionally, Skipper discloses addition of flame retardants such as hydrated magnesia to the backing (column 2 line 68) in the amount of 10 to 400 parts by weight per 100 parts of the polymers (column 3 lines 20-25). It is submitted that hydrated magnesia is known in the art as magnesium hydroxide. This is evidenced by column 3 lines 59-60 of Langer which recites "magnesium hydroxide (hydrated magnesia)." Thus, hydrated magnesia of Skipper meets claim requirement of at least 60% by weight of one or more thermally-conductive fillers selected from the group consisting of magnesium hydroxide as presently claimed.

Art Unit: 1794

19. With respect to claims 39-40, Skipper does not explicitly disclose "a crosslinked polymer selected from the group consisting of ethylene-co-octene, ethylene and methyl acrylate and ethylene and butyl acrylate, wherein the melt flow index of the polymer prior to crosslinking is...".

20. However, GB412A discloses crosslinked polymeric compositions that are useful in production of insulation materials for wires and cables (abstract and page 5 lines 45-50). Skipper's crosslinked composition is also useful in electrical insulation for wires and cables (column 1 lines 5-10).

21. Further, the polymeric composition of GB412A comprises a liner low density ethylene homo or copolymer (abstract). Additionally, the blend of GB412A includes elastomeric polymers such as ethylene copolymers (page 2 lines 35-40). As preferred elastomers, GB412A discloses ethylene/alkyl acrylate or ethylene/alkyl methacrylate wherein alkyl group has 1-4 carbon atoms (page 2 lines 45-46). According to GB412A, the elastomer can be a simple copolymer of ethylene with methyl acrylate, butyl acrylate etc. (page 2 lines 64-65). Additionally, at page 3 lines 1-5, GB412A discloses "These copolymers [which includes ethylene and methyl acrylate] have melt index within the range of 0.1 to 70 at 190°C", which meets the melt index as presently claimed.

22. Additionally, the disclosure of GB412A at page 11 lines 25-44 disclosing ethylene/methyl acrylate elastomer and irradiating the blend containing said elastomer is interpreted to meet the claim requirement of crosslinked polymer selected from the group consisting of ethylene and methyl acrylate.

Art Unit: 1794

23. As set forth above, inventions of Skipper and GB412A are related to insulating materials for wires and cables. Further, Skipper at column 1 lines 12-13 discloses that the blend of his invention includes vinyl acetate/alkene copolymer with a further polymer. GB412A discloses blend composition that includes applicant's claimed crosslinked polymer such as ethylene and methyl acrylate and ethylene and butyl acrylate. Additionally, GB412A at page 2 lines 1-10 discloses that the crosslinked compositions of the invention have high elongation versus modulus performance. Further, at page 3 lines 37-41, GB412A discloses that the crosslinked composition of the invention offers various unforeseen advantages e.g. reduced hot creep and hot tension set phenomena.

24. Based on above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the crosslinked polymeric composition which includes applicant's polymer selected from the group consisting of ethylene and methyl acrylate and ethylene and butyl acrylate as taught by GB412A in the invention of Skipper, because said composition provides high elongation versus modulus performance, reduce hot creep and hot tension set phenomena.

25. As to the claimed properties of the film backing having an elastic torque of at least 3 dNm (claims 39-40), dielectric strength of the tape (claim 46) and effective thermal conductivity of tape (claim 47), it is reasonable to presume that said properties are necessarily present in the invention of Skipper as modified by GB412A.

Art Unit: 1794

26. The support for said presumption is based on the fact that the adhesive tapes of applicant and that of Skipper as modified by GB412A comprise a film backing comprising a crosslinked polymer selected from the group consisting of ethylene and methyl acrylate and ethylene and butyl acrylate, wherein the melt flow index of said polymers prior to crosslinking is within the range of melt flow index as presently claimed. Additionally, the adhesive tapes of applicant and that of Skipper as modified by GB412A include thermally-conductive filler (e.g. magnesium hydroxide) in the amount as presently claimed.

27. Based on above, the adhesive tapes of Skipper as modified by GB412A and that of applicant are similar. Thus, the aforementioned properties would necessarily be present in the invention of Skipper as modified by GB412A.

28. **Claim 48 is rejected under 35 U.S.C. 103(a) as obvious over Skipper (US 4,322,575) in view of GB 2 019 412A (“GB412A”), and as evidenced by Langer (US 4,600,634) as applied to claim 40 above, and further in view of Ono et al. (US 3,971,766).**

29. Skipper is silent as to teaching the thickness of the adhesive tape is less than 300 micrometers as presently claimed.

30. However, Ono discloses an adhesive tape. Further at column 4 lines 30-40, Ono discloses a coating of 40 micron thick adhesive layer (after drying) on the surface of a 100 micron thick backing (thus total thickness of the tape being 140 microns).

31. Therefore, it would have been obvious to use the tape having total thickness of less than 300 micrometers, motivated by the desire to form a suitable adhesive tape.

Response to Arguments

32. Applicant's arguments filed on 01/27/09 have been fully considered but they are not persuasive.

33. On pages 8-9 of the amendment applicant argues following:

(A) Applicant's crosslinked polymer does not contain vinyl acetate component as taught by Skipper.

(B) Applicant has defined thermally-conductive fillers which are not disclosed in Skipper.

(C) The linear low density of GB412A was only a preferred embodiment of alkene in the vinyl acetate/alkene copolymer of Skipper. Thus, even if one skilled in the art made the substitution by using the linear low density ethylene of GB412A in skipper, one skilled in the art would arrive at a copolymer of vinyl acetate and linear low density ethylene, which is not applicant's invention.

34. In response to applicant's arguments, the Examiner submits following:

- (1) in response to applicant's argument (A), as set forth in this Office action, Skipper is not relied upon to teach the presently claimed crosslinked polymer selected from the group consisting of ethylene-co-octene, ethylene and methyl acrylate and ethylene and butyl acrylate; instead GB412A is relied upon to render obvious this limitation.
- (2) In response to applicant's argument (B), contrary to applicant's assertion, Skipper discloses hydrated magnesia (column 2 line 68) which is magnesium hydroxide.
- (3) In response to applicant's argument (C), the Examiner submits that as set forth in this Office action, the Examiner is not making any substitution as asserted by applicant; instead GB412A is relied upon to render obvious applicant's claim limitation of crosslinked polymer selected from the group consisting of ethylene and methyl acrylate and ethylene and butyl acrylate as being obvious. Specifically, GB412A discloses crosslinked polymeric compositions that are useful in production of insulation materials for wires and cables (abstract and page 5 lines 45-50). Skipper's crosslinked composition is also useful in electrical insulation for wires and cables (column 1 lines 5-10).

35. Further, the polymeric composition of GB412A comprises a liner low density ethylene homo or copolymer (abstract). Additionally, the blend of GB412A includes elastomeric polymers such as ethylene copolymers (page 2 lines 35-40). As preferred elastomers, GB412A discloses ethylene/alkyl acrylate or ethylene/alkyl methacrylate wherein alkyl group has 1-4 carbon atoms (page 2 lines 45-46). According to GB412A, the elastomer can be a simple copolymer of ethylene with methyl acrylate, butyl acrylate etc. (page 2 lines 64-65). Additionally, at page 3 lines 1-5, GB412A discloses "These copolymers [which includes ethylene and methyl acrylate] have melt index within the range of 0.1 to 70 at 190°C", which meets the melt index as presently claimed.

36. Additionally, the disclosure of GB412A at page 11 lines 25-44 disclosing ethylene/methyl acrylate elastomer and irradiating the blend containing said elastomer is interpreted to meet the claim requirement of crosslinked polymer selected from the group consisting of ethylene and methyl acrylate.

37. As set forth above, inventions of Skipper and GB412A are related to insulating materials for wires and cables. Further, Skipper at column 1 lines 12-13 discloses that the blend of his invention includes vinyl acetate/alkene copolymer with a further polymer. GB412A discloses blend composition that includes applicant's claimed crosslinked polymer such as ethylene and methyl acrylate and ethylene and butyl acrylate. Additionally, GB412A at page 2 lines 1-10 discloses that the crosslinked compositions of the invention have high elongation versus modulus performance.

Further, at page 3 lines 37-41, GB412A discloses that the crosslinked composition of the invention offers various unforeseen advantages e.g. reduced hot creep and hot tension set phenomena.

38. Based on above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the crosslinked polymeric composition which includes applicant's polymer selected from the group consisting of ethylene and methyl acrylate and ethylene and butyl acrylate as taught by GB412A in the invention of Skipper, because said composition provides high elongation versus modulus performance, reduce hot creep and hot tension set phenomena. Accordingly, applicant's arguments are not found persuasive.

Conclusion

39. **The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 4,286,023 to Ongchin discloses crosslinked polyolefin substrate.**

40. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

41. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

43. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

44. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 10/540,630
Art Unit: 1794

Page 15

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./
Examiner, Art Unit 1794

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794